

REMARKS

Examiner, in the Official Action dated June 4, 2008 rejected the proposed claims 1 through 5 under 35 U.S.C. 102 (b) as being anticipated by Krowtech et al., and also by Woodings et al. Regarding Krowtech, Examiner stated that a lance device is taught which includes a frame, guide, and pneumatic reciprocating drive means, in the embodiments of figures 2-4 for example of that patent, which can be operated in the manner recited in the instant claims, thereby showing all the aspects of those claim. With respect to Woodings et al, Examiner found that Woodings teaches a lance device, namely the drill shaft, including a frame, guide, and reciprocating pneumatic drive means, in the embodiments shown in figures 2 and 3, which can be operated in the manner recited in the instant claims, thereby showing all aspects of the above claims since the drill meets the general description of a lance.

Applicant has submitted an amended main claim in view of Examiner's rejections. It is intended that the new main claim sufficiently distinguishes the present invention from the cited references as will be discussed herewith. The key functional difference in the present invention when compared to the references is in the movement of the lance. The improved pipe cleaning performance of the lance in the present invention is produced by the forward and backward movement of the lance or its reciprocating movement, along with the different timing intervals for the forward and backward movement. In Krowtech, the retractable sootblower is said to "reciprocate". "Reciprocating", however, means in this context, a one directional movement of the extendable blowing tube from a state of retraction toward a state of extension and vice

versa (see col. 5, lines 34-51). The device of the present invention, in contrast, produces a movement that alternates direction of movement multiple times. The alternating direction of movement occurs as the lance increases its extension slightly every time until its full state of extension is reached, thereby producing enhanced cleaning ability (see present application, paragraph 5). The main claim has been amended to more clearly reflect this movement compared to the movement of the retractable sootblower of Krowtech, and in applicant's opinion obviates the use of Krowtech as a reference.

Woodings et al., discloses a drill and does not pertain to a device driving a lance for cleaning pipes in a heat exchanger. Woodings et al., in his drill merely extends and retracts the drill's driving member without alternating the driving direction in the process. Note that in col. 9, line 21, Woodings discloses that the driving member is driven forward "progressively", and would have no reason to use a reciprocation technique during operation of his device. The main claim as now written, has added language which clearly shows that Woodings does not anticipate or render the present invention obvious.

The following can be mentioned to further illustrate the differences in the present invention and the cited references. The operating system in the present invention uses merely pneumatic switches to adjust the time intervals during the reciprocating movement of the lance. This particular embodiment enables manual on/off control of the lance, so that the reciprocating movement of the lance is accomplished automatically in an inherently safe way. The use of the pneumatic switches foregoes the use of more complex electronic systems and additional opportunities for failure that these systems would introduce to the device. A simpler, less risky system is especially desired if the device was intended for use in an environment which had, for example, an explosion risk.

In light of the above, it is submitted that the cited references neither anticipate nor render obvious the present invention as now claimed, whether taken individually or in any combination. Reconsideration of the rejections of the claims is requested and allowance of the claims as now presented is solicited.

Sincerely,

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